OREsome North Pennines: Site Overview

Pike Law lead hushes and mines

SAM list entry number: 1015835
Other designations: Pike Law Mines SSSI and Geological Conservation Review (GCR) site
North Pennine Moors SPA/ Moor House-Upper Teesdale SAC
Grid ref.: NY902315
County: County Durham
Parishes: Forest and Frith, Newbiggin
Altitude: 450-490m
Habitat: Exposed moorland

Highlights

Archaeology: Pike Law is one of the best preserved pre-19th century lead mining landscapes known in the North Pennines. It retains a wide range of well preserved features including: visually impressive hushes with exposed working faces; and intricate water management system with an extensive network of dams and leats; well preserved manual ore processing areas and barrow tipped spoil heaps; structural remains of small buildings; and a range of shaft forms.
**Botany:** This large site is high on the watershed and exposed to the elements, and so has a limited plant and bryophyte flora. No botanical interest has so far been found, but there may be things still to find in more sheltered spots.

A rich variety of lichens were found, including the nationally rare *Cladonia uncialis uncialis* (possibly just a growth form of the more common subspecies *biuncialis*), *Ochrolechia frigida*, *Porpidia melinodes*, *Rhizocarpon oederi*, and *Stereocaulon vesuvianum nodulosum*, all of which are associated with metal mines. Occasional limestone outcrops supported a different lichen flora, with *Collema cristatum*, *Gyalecta jenensis* and *Solenopsora candicans*, all of which are scarce in the area.

**Geology:** Pike Law is an important site at which a dense concentration of mineralised veins and associated replacement deposits, showing also the effects of supergene alteration, may be examined both in situ and in abundant mine spoil.

The entire landscape of this site is a geological ‘highlight’. In addition, a number of individual features are of considerable importance, both to enable understanding of the site itself, but also for their wider interest in understanding the nature of North Pennine mineralisation and the natural evolution of its landscape.

**Site description**

This is a large mining landscape on either side of the road from Westgate (in Weardale) to Newbiggin (Teesdale), on the southern slopes of Pike Law. Much of it is on the watershed with Green Fell, falling away to the east into the valley of the Flushiemere Beck and to the west into the valley of the Wester Beck.

This area was mined from early times and was already well established in 1753. It continued to be productive until about 1852, by when the mines were nearly exhausted. Working continued until 1891 but little ore was raised during the last decades. The remains are one of the best preserved pre-19th century lead mining landscapes known in the northern Pennines.

![Fig.2 Location of Pike Law in relation to the other OREsome mine sites](image-url)
**Botanical interest**

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![Fig.3 Areas of lichen interest at Pike Law, also showing the extent of the SAM:](image)

(1) Leonards Hush and associated trackways, structures and spoil;
(2) boulder trains;
(3) boulder field.
**Geological interest**

The geological, geomorphological and mineralogical features of Pike Law Mines currently enjoy statutory protection as a SSSI and GCR site. The most comprehensive and concise modern descriptions of the site’s features are discussed in detail in Bridges and Young (2007) and Bevins et al (2010).

The area is crossed by at least six lead veins running E-W and NE-SW. Three of these, Leonard’s Vein, Pike Law Old Vein and Flask Vein are marked at the surface (from N to S) by deep hushes of the same names. Each of these has a network of gullies leading into it and a complex of dams and leats to manage water flow. Small ore processing areas are scattered throughout this hush system, with associated dumps of processed waste. At the east end of the hushes, towards the foot of the slope, there is a wide area of waste spreads washed down from the gullies.

The Broadley Hill Veins, further to the north, were worked via shafts and at least four levels driven from the side of Leonard’s Hush.

On the west side of the road the West End Hushes form deep opencuts where the Pike Law and Broadley Hill Veins converge. At their south west end there is a broad area of washed out material which covers more than 0.5ha and is up to 2.5m deep where it is cut by Wester Beck. Other hushes run into these, and there are a number of shafts with mounds over the Broadley Hill and New Streak veins. Small areas of bare ground on either side of the hushes, typically only 1x2m in size, are considered to be the remains of ore-processing areas where the ore was crushed and sorted by hand.

A later barytes mine is beyond the scheduled monument area and not well preserved.

**Fig.4** Map showing the areas described in the OREsome Pike Law geology report. L marks position of levels for which evidence is visible.
**Threats**

**Archaeology:** 72 condition assessment forms were completed. The main threats are weather damage, flooding, stream erosion and scrub growth. Overall, the risk level of these threats to the historic features was recorded as low (optimal conditions) or low /medium (minor localised problems). However, features at higher risk include two stone structures (survey sheet numbers PL-SW-13 and PL-SW-14) and a dam (survey sheet number PL-SW-3/1) where problems are considered significant.

![Fig.5 Dots represent archaeological features surveyed.](image)

**Botany:** None identified

**Geology:** The geological and geomorphological features of this site appear to be sufficiently robust to attract little need for intervention. Similarly, most of the features of mineralogical interest are also comparatively robust, though there is some evidence of damage to some mineralised exposures by mineral collectors.

As with all such sites, it is essential to ensure that appropriate expert geological opinion is sought when planning remedial or conservation works related to built structures or mining features, and that any recommendations arising from such consultations are adopted.

**Opportunities**

**Archaeology:** Ongoing monitoring of the condition of features will highlight future management priorities

**Botany:** This is a large site and needs more time to complete the survey, especially for lichens and bryophytes. Rare species are known to be growing on the hills nearby and may well be here as well.
Relative dating of rock exposures by lichenometry could help elucidate the history of the boulder trains. This would have to be done using *Fuscia lygaea*, the most common crustose species on the boulders, as the lichens usually used for lichenometry in the North Pennines are not present in any number. There is no calibrated growth curve for *F. lygaea* and but it may be possible to produce one for the site if the dates of abandonment of other structures are known.

**Geology:** Detailed examination of this site for the OREsome Project has highlighted a number of features that were not addressed in previously published descriptions and interpretations of the site. Indeed, it might be legitimately claimed that it is as a result of the multidisciplinary approach adopted through this project that these, as yet unexplained, features have come to light.

The principal interest here lies in the interpretation of the extensive series of large gully features. Although hitherto regarded, rather uncritically, as essentially mining features, systematic study of the form and volume of these features gives serious concern over the legitimacy of such an interpretation. A strong case can be made for investigating the relative importance of natural erosion and human intervention in creating the complex series of apparent ‘excavations’ at Pike Law, especially in the light of the recent re-evaluation and re-interpretation of Coldberry Gutter: there are some significant potential similarities between these two sites.

There is thus potential to undertake further research on this site, ideally alongside similar investigations at Coldberry.